Chemical Analysis Report

NE-DIST-2023-12-08-02

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Nassau North 2 Boat**
Request ID: **RQ-2023-12-04-31**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 22-DEC-2023 09:02

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Egan Creek at Atlantic **Collection Date/Time: 12/07/2023 10:20**

Field ID: G4NE0285 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2455643	DEP SOP: NU-094-1	Color (true)	58		PCU	P438721	
	EPA 180.1 Rev. 2.0	Turbidity	7.7		NTU	P438725	
	EPA 300.0 Rev. 2.1	Chloride	9.7E+03		mg Cl/L	P439034	
		Sulfate	1.3E+03		mg SO4/L	P439140	
	SM 2320 B-2011	Total Alkalinity	125	A	mg CaCO3/L	P438823	
	SM 2540 C-2015	TDS	1.58E+04		mg/L	P439248	
	SM 2540 D-2015	TSS	9	I A	mg/L	P439289	
	SM 4500-F- C-2011	Fluoride	0.80		mg F/L	P438826	
2455644	EPA 350.1 Rev. 2.0	Ammonia-N	0.084		mg N/L	P438986	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P438855	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P438877	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P438834	
	SM 5310 B-2014	Organic Carbon	12		mg C/L	P438783	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: St Mary's R at Ga Line US 17 **Collection Date/Time: 12/07/2023 11:30**

Field ID: 19010001 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2455645	DEP SOP: NU-094-1	Color (true)	220		PCU	P438721	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P438725	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P439034	
		Sulfate	7.5		mg SO4/L	P439140	
	SM 2320 B-2011	Total Alkalinity	6.9		mg CaCO3/L	P438822	
	SM 2540 C-2015	TDS	141		mg/L	P439247	
	SM 2540 D-2015	TSS	3	I	mg/L	P439287	
	SM 4500-F- C-2011	Fluoride	0.051	I	mg F/L	P438825	
2455646	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P438985	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P439050	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P438890	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P438870	
	SM 5310 B-2014	Organic Carbon	25		mg C/L	P438782	
2455655	EPA 200.7 Rev. 4.4	Calcium	5.87		mg/L	P438801	
		Iron	620		ug/L	P438801	
		Magnesium	4.21		mg/L	P438801	
		Potassium	1.5		mg/L	P438801	
		Sodium	23.4		mg/L	P438801	
		Strontium	38.2		ug/L	P438801	
		Tin	3.0	U	ug/L	P438801	
		Titanium	5.5		ug/L	P438801	
		Vanadium	2.0	U	ug/L	P438801	
		Zinc	5.0	U	ug/L	P438801	
	EPA 200.8 Rev. 5.4	Aluminum	461		ug/L	P438801	
		Antimony	0.050	U	ug/L	P438801	
		Arsenic	0.34		ug/L	P438801	
		Barium	14.9		ug/L	P438801	
		Beryllium	0.031	I	ug/L	P438801	
		Boron	27.8		ug/L	P438801	
		Cadmium	0.020	U	ug/L	P438801	
		Chromium	0.61	I	ug/L	P438801	
		Cobalt	0.133		ug/L	P438801	
		Copper	0.58	I	ug/L	P438801	
		Lead	0.47		ug/L	P438801	
		Manganese	8.71		ug/L	P438801	
		Molybdenum	0.22	I	ug/L	P438801	
		Nickel	0.50	U	ug/L	P438801	
		Selenium	0.20	U	ug/L	P438801	
		Silver	0.010	U	ug/L	P438801	
		Thallium	0.10	U	ug/L	P438801	
	SM 2340 B-2011	Hardness	32.0		mg/L	P438801	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Nassau Riv US 17 **Collection Date/Time: 12/07/2023 12:50**

Field ID: 19020002 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2455656	EPA 200.7 Rev. 4.4	Calcium	36.8		mg/L	P438801	
		Iron	830		ug/L	P438801	
		Magnesium	95.8		mg/L	P438801	
		Potassium	34.0		mg/L	P438801	
		Sodium	843		mg/L	P438801	
		Strontium	580		ug/L	P438801	
		Tin	3.0	U	ug/L	P438801	
		Titanium	10.4		ug/L	P438801	
		Vanadium	2.4	I	ug/L	P438801	
		Zinc	5.0	U	ug/L	P438801	
	EPA 200.8 Rev. 5.4	Aluminum	577		ug/L	P438801	
		Antimony	0.086	I	ug/L	P438801	
		Arsenic	1.08		ug/L	P438801	
		Barium	16.5		ug/L	P438801	
		Beryllium	0.046		ug/L	P438801	
		Boron	324		ug/L	P438801	
		Cadmium	0.020	U	ug/L	P438801	
		Chromium	0.96	I	ug/L	P438801	
		Cobalt	0.183		ug/L	P438801	
		Copper	0.68	I	ug/L	P438801	
		Lead	0.55		ug/L	P438801	
		Manganese	28.9		ug/L	P438801	
		Molybdenum	0.79		ug/L	P438801	
		Nickel	0.50	U	ug/L	P438801	
		Selenium	0.20	U	ug/L	P438801	
		Silver	0.010	U	ug/L	P438801	
		Thallium	0.10	U	ug/L	P438801	
	SM 2340 B-2011	Hardness	487		mg/L	P438801	

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P438721

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438725

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438801

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438801

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439034

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439140

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438985

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438986

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438855

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439050

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438877

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438890

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438834

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438870

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P438822

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2320 B-2011
Batch ID: P438823

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-2015
Batch ID: P439247

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P439248

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P439287

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P439289

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P438825

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P438826

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P438782

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 5310 B-2014
Batch ID: P438783

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P438721

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438725

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	103		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438801

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	102		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Strontium	103		P	85 - 115
Tin	102		P	85 - 115
Titanium	100		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438801

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	101		P	85 - 115
Barium	101		P	85 - 115
Beryllium	92.5		P	85 - 115
Boron	104		P	85 - 115
Cadmium	99.0		P	85 - 115
Chromium	112		P	85 - 115
Cobalt	100		P	85 - 115
Copper	101		P	85 - 115
Lead	102		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	99.9		P	85 - 115
Nickel	103		P	85 - 115
Selenium	100		P	85 - 115
Silver	103		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439034

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	102		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439140

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438855

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	101		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438890

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438834

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438870

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	105		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P438822

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P438823

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.5		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P439247

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.4		P	85 - 115

Reference Method: SM 2540 C-2015
Batch ID: P439248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	95.2		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P439287

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	102		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P439289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	95.2		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P438825

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P438826

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P438782

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2014
Batch ID: P438783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.9		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455552	Calcium	101	101	P/P	80 - 120
2455552	Iron	102	102	P/P	80 - 120
2455552	Magnesium	102	102	P/P	80 - 120
2455552	Potassium	102	101	P/P	80 - 120
2455552	Sodium	102		P	80 - 120
2455552	Strontium	102	102	P/P	80 - 120
2455552	Tin	102	103	P/P	80 - 120
2455552	Titanium	96.9	95.6	P/P	80 - 120
2455552	Vanadium	101	101	P/P	80 - 120
2455552	Zinc	103	104	P/P	80 - 120
2455734	Calcium	101		P	80 - 120
2455734	Iron	100		P	80 - 120
2455734	Magnesium	102		P	80 - 120
2455734	Potassium	101		P	80 - 120
2455734	Sodium	103		P	80 - 120
2455734	Strontium	97.1		P	80 - 120
2455734	Tin	99.8		P	80 - 120
2455734	Titanium	99.4		P	80 - 120
2455734	Vanadium	101		P	80 - 120
2455734	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455552	Aluminum	99.2	100	P/P	80 - 120
2455552	Antimony	103	104	P/P	80 - 120
2455552	Arsenic	101	101	P/P	80 - 120
2455552	Barium	101	102	P/P	80 - 120
2455552	Beryllium	94.3	91.7	P/P	80 - 120
2455552	Boron	102	104	P/P	80 - 120
2455552	Cadmium	101	102	P/P	80 - 120
2455552	Chromium	99.2	96.7	P/P	80 - 120
2455552	Cobalt	98.7	98.9	P/P	80 - 120
2455552	Copper	98.9	99.5	P/P	80 - 120
2455552	Lead	102	103	P/P	80 - 120
2455552	Manganese	98.2	103	P/P	80 - 120
2455552	Molybdenum	100	101	P/P	80 - 120
2455552	Nickel	97.4	96.9	P/P	80 - 120
2455552	Selenium	100	100	P/P	80 - 120
2455552	Silver	101	102	P/P	80 - 120
2455552	Thallium	102	103	P/P	80 - 120
2455734	Aluminum	99.8		P	80 - 120
2455734	Antimony	103		P	80 - 120
2455734	Arsenic	100		P	80 - 120
2455734	Barium	101		P	80 - 120
2455734	Beryllium	93.6		P	80 - 120
2455734	Boron	103		P	80 - 120
2455734	Cadmium	98.8		P	80 - 120
2455734	Chromium	101		P	80 - 120
2455734	Cobalt	98.4		P	80 - 120
2455734	Copper	99.1		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455734	Lead	102		P	80 - 120
2455734	Manganese	98.7		P	80 - 120
2455734	Molybdenum	99.3		P	80 - 120
2455734	Nickel	97.5		P	80 - 120
2455734	Selenium	99.2		P	80 - 120
2455734	Silver	102		P	80 - 120
2455734	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455515	Chloride	103		P	90 - 110
2455627	Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455515	Sulfate	103		P	90 - 110
2455627	Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455628	Ammonia-N	97.6	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2456084	Ammonia-N	98.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455613	Kjeldahl Nitrogen	105	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455630	Kjeldahl Nitrogen	97.2	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455612	NO2NO3-N	99.2	100	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438890

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455630	NO2NO3-N	96.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455304	Total-P	98.0	96.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P438825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455777	Fluoride	102	102	P/P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P438826

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455643	Fluoride	102	103	P/P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P438782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455518	Organic Carbon	98.6	98.5	P/P	85 - 115

Reference Method: SM 5310 B-2014
Batch ID: P438783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455644	Organic Carbon	94.2	92.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P438721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455684	Color (true)	1.71	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455625	Turbidity	15.4	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455552	Calcium	0.390	Spike	P	0 - 20
2455552	Iron	0.328	Spike	P	0 - 20
2455552	Magnesium	0.149	Spike	P	0 - 20
2455552	Potassium	1.17	Spike	P	0 - 20
2455552	Sodium	0.154	Spike	P	0 - 20
2455552	Strontium	0.274	Spike	P	0 - 20
2455552	Tin	0.515	Spike	P	0 - 20
2455552	Titanium	1.26	Spike	P	0 - 20
2455552	Vanadium	0.123	Spike	P	0 - 20
2455552	Zinc	1.26	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455552	Aluminum	0.733	Spike	P	0 - 20
2455552	Antimony	0.728	Spike	P	0 - 20
2455552	Arsenic	0.0579	Spike	P	0 - 20
2455552	Barium	0.279	Spike	P	0 - 20
2455552	Beryllium	2.44	Spike	P	0 - 20
2455552	Boron	1.53	Spike	P	0 - 20
2455552	Cadmium	1.93	Spike	P	0 - 20
2455552	Chromium	1.73	Spike	P	0 - 20
2455552	Cobalt	0.221	Spike	P	0 - 20
2455552	Copper	0.143	Spike	P	0 - 20
2455552	Lead	0.697	Spike	P	0 - 20
2455552	Manganese	3.95	Spike	P	0 - 20
2455552	Molybdenum	0.454	Spike	P	0 - 20
2455552	Nickel	0.447	Spike	P	0 - 20
2455552	Selenium	0.314	Spike	P	0 - 20
2455552	Silver	0.320	Spike	P	0 - 20
2455552	Thallium	1.53	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455515	Chloride	1.42	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455515	Sulfate	1.43	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455628	Ammonia-N	1.41	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2456084	Ammonia-N	2.00	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455613	Kjeldahl Nitrogen	3.55	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455630	Kjeldahl Nitrogen	1.51	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455612	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455630	NO2NO3-N	1.26	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455304	Total-P	1.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455628	Total-P	2.20	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P438822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455777	Total Alkalinity	0.100	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011
Batch ID: P438823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455643	Total Alkalinity	1.93	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P439247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455264	TDS	4.16	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P439248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455716	TDS	6.50	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P438825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455777	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 4500-F- C-2011
Batch ID: P438826

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455643	Fluoride	0.477	Spike	P	0 - 1.9

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2014
Batch ID: P438782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455518	Organic Carbon	0.175	Spike	P	0 - 15

Reference Method: SM 5310 B-2014
Batch ID: P438783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455644	Organic Carbon	1.63	Spike	P	0 - 15

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A123108
Included Lab Sample IDs: 2455643

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1
Run ID: A123109
Included Lab Sample IDs: 2455645

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A123111
Included Lab Sample IDs: 2455643, 2455645

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A123118
Included Lab Sample IDs: 2455643, 2455645

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	101	101	P/P	90 - 110

Reference Method: SM 5310 B-2014
Run ID: A123141
Included Lab Sample IDs: 2455644, 2455646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	108	P/P	85 - 115
Organic Carbon	96.2	100	P/P	85 - 115

Reference Method: SM 2320 B-2011
Run ID: A123158
Included Lab Sample IDs: 2455643, 2455645

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.3	94.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A123158
Included Lab Sample IDs: 2455643, 2455645

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A123178
Included Lab Sample IDs: 2455644

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A123188
Included Lab Sample IDs: 2455646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A123196
Included Lab Sample IDs: 2455644

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A123205
Included Lab Sample IDs: 2455655, 2455656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	101	P/P	90 - 110
Antimony	102	103	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Barium	100	101	P/P	90 - 110
Beryllium	97.3	96.3	P/P	90 - 110
Boron	101	100	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	102	102	P/P	90 - 110
Cobalt	101	99.9	P/P	90 - 110
Lead	102	102	P/P	90 - 110
Manganese	101	101	P/P	90 - 110
Molybdenum	101	102	P/P	90 - 110
Nickel	101	100	P/P	90 - 110
Selenium	102	101	P/P	90 - 110
Silver	104	104	P/P	90 - 110
Thallium	103	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A123220
Included Lab Sample IDs: 2455655, 2455656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	99.7	P/P	90 - 110
Iron	99.8	98.5	P/P	90 - 110
Magnesium	100	98.6	P/P	90 - 110
Potassium	99.8	99.6	P/P	90 - 110
Sodium	101	100	P/P	90 - 110
Strontium	106	106	P/P	90 - 110
Tin	105	104	P/P	90 - 110
Titanium	103	103	P/P	90 - 110
Vanadium	103	103	P/P	90 - 110
Zinc	105	104	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A123222
Included Lab Sample IDs: 2455644

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A123230
Included Lab Sample IDs: 2455644, 2455646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.0	97.4	P/P	90 - 110
Ammonia-N	97.3	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A123232
Included Lab Sample IDs: 2455646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	97.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A123244
Included Lab Sample IDs: 2455655, 2455656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	96.8	97.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A123254
Included Lab Sample IDs: 2455643, 2455645

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A123261
Included Lab Sample IDs: 2455656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	98.4	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A123294
Included Lab Sample IDs: 2455646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	95.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	102					1.71	
EPA 180.1 Rev. 2.0	Turbidity	103					15.4	
EPA 200.7 Rev. 4.4	Calcium	104	101	101	101			0.390
	Iron	102	102	102	100			0.328
	Magnesium	103	102	102	102			0.149
	Potassium	101	102	101	101			1.17
	Sodium	101	102	103				0.154
	Strontium	103	102	102	97.1			0.274
	Tin	102	102	103	99.8			0.515
	Titanium	100	96.9	95.6	99.4			1.26
	Vanadium	102	101	101	101			0.123
	Zinc	102	103	104	101			1.26
EPA 200.8 Rev. 5.4	Aluminum	101	99.2	100	99.8			0.733
	Antimony	103	103	104	103			0.728
	Arsenic	101	101	101	100			0.0579
	Barium	101	101	102	101			0.279
	Beryllium	92.5	94.3	91.7	93.6			2.44
	Boron	104	102	104	103			1.53
	Cadmium	99.0	101	102	98.8			1.93
	Chromium	112	101	99.2	96.7			1.73
	Cobalt	100	98.7	98.9	98.4			0.221
	Copper	101	98.9	99.5	99.1			0.143
	Lead	102	102	103	102			0.697
	Manganese	101	98.2	103	98.7			3.95
	Molybdenum	99.9	100	101	99.3			0.454
	Nickel	103	97.4	96.9	97.5			0.447
	Selenium	100	100	100	99.2			0.314
	Silver	103	101	102	102			0.320
	Thallium	101	102	103	103			1.53
EPA 300.0 Rev. 2.1	Chloride	102	103	98.8			1.42	
	Sulfate	102	103	98.2			1.43	
EPA 350.1 Rev. 2.0	Ammonia-N	95.8	97.6	99.4				1.41
	Ammonia-N	97.4	98.2	101				2.00
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	105	109				3.55
	Kjeldahl Nitrogen	103	97.2	100				1.51
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.2	100				1.00
	NO2NO3-N	98.5	96.2					1.26
EPA 365.1 Rev. 2.0	Total-P	102	98.0	96.5				1.52
	Total-P	105						2.20
SM 2320 B-2011	Total Alkalinity	98.7					0.100	
	Total Alkalinity	96.5					1.93	
SM 2540 C-2015	TDS	96.4					4.16	
	TDS	95.2					6.50	
SM 2540 D-2015	TSS	102						
	TSS	95.2						
SM 4500-F- C-2011	Fluoride	103	102	102				0.0
	Fluoride	103	102	103				0.477
SM 5310 B-2014	Organic Carbon	101	98.6	98.5				0.175
	Organic Carbon	96.9	94.2	92.2				1.63

Reference Method Descriptions

Method	Description	Associated Samples

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2455643, 2455645
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2455643, 2455645
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2455655, 2455656
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2455655, 2455656
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2455643, 2455645
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2455643, 2455645
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2455644, 2455646
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2455644, 2455646
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2455644, 2455646
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2455644, 2455646
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2455643, 2455645
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2455655, 2455656
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2455643, 2455645
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2455643, 2455645
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2455643, 2455645
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2455644, 2455646

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	12/08/2023			12/08/2023 14:35	Samantha L Bates	2455643
	12/08/2023			12/08/2023 15:31	Samantha L Bates	2455645
EPA 180.1 Rev. 2.0	12/08/2023			12/08/2023 14:51	Anna M. Plaviak	2455643
	12/08/2023			12/08/2023 14:54	Anna M. Plaviak	2455645
EPA 200.7 Rev. 4.4	12/08/2023	12/12/2023 11:45	George D Taylor	12/13/2023 16:35	McKinley C Carter	2455655
	12/08/2023	12/12/2023 11:45	George D Taylor	12/13/2023 16:43	McKinley C Carter	2455656
	12/08/2023	12/12/2023 11:45	George D Taylor	12/15/2023 12:46	Chase Roberts	2455656
EPA 200.8 Rev. 5.4	12/08/2023	12/12/2023 11:45	George D Taylor	12/13/2023 20:06	Conrad Hartmann	2455655
	12/08/2023	12/12/2023 11:45	George D Taylor	12/13/2023 20:15	Conrad Hartmann	2455656
	12/08/2023	12/12/2023 11:45	George D Taylor	12/14/2023 23:59	Emily M Philpot	2455655
	12/08/2023	12/12/2023 11:45	George D Taylor	12/15/2023 00:09	Emily M Philpot	2455656
EPA 300.0 Rev. 2.1	12/08/2023			12/13/2023 11:51	Anna M. Plaviak	2455643
	12/08/2023			12/13/2023 12:06	Anna M. Plaviak	2455645
	12/08/2023			12/16/2023 07:04	James L Waggerby	2455643
	12/08/2023			12/16/2023 07:19	James L Waggerby	2455645
EPA 350.1 Rev. 2.0	12/08/2023			12/14/2023 11:05	Khloe J Berg	2455646
	12/08/2023			12/14/2023 11:25	Khloe J Berg	2455644
EPA 351.2 Rev. 2.0	12/08/2023	12/13/2023 09:31	Samantha L Bates	12/14/2023 11:13	Samantha L Bates	2455644
	12/08/2023	12/15/2023 13:03	Simonne.V. Calhoun	12/18/2023 14:20	Samantha L Bates	2455646
EPA 353.2 Rev. 2.0	12/08/2023			12/11/2023 14:48	Fadila Guebre	2455644
	12/08/2023			12/12/2023 13:35	Fadila Guebre	2455646
EPA 365.1 Rev. 2.0	12/08/2023	12/12/2023 14:15	Adam P Silver	12/13/2023 13:17	Simonne.V. Calhoun	2455644
	12/08/2023	12/13/2023 13:13	Adam P Silver	12/14/2023 14:45	James L Waggerby	2455646
SM 2320 B-2011	12/08/2023			12/12/2023 00:22	Adam P Silver	2455645
	12/08/2023			12/12/2023 02:18	Adam P Silver	2455643
SM 2340 B-2011	12/08/2023			12/13/2023 16:35	McKinley C Carter	2455655
	12/08/2023			12/13/2023 16:43	McKinley C Carter	2455656
SM 2540 C-2015	12/08/2023			12/12/2023 15:24	Yijie Li	2455643, 2455645
SM 2540 D-2015	12/08/2023			12/12/2023 15:24	Yijie Li	2455643, 2455645
SM 4500-F- C-2011	12/08/2023			12/12/2023 00:22	Adam P Silver	2455645
	12/08/2023			12/12/2023 01:44	Adam P Silver	2455643
SM 5310 B-2014	12/08/2023			12/11/2023 20:03	Kenneth H Lee	2455646
	12/08/2023			12/11/2023 22:27	Kenneth H Lee	2455644